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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,792	07/20/2006	Naohiro Yoshida	128727	3172

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OLIFF & BERRIDGE, PLC  
P.O. BOX 320850  
ALEXANDRIA, VA 22320-4850

EXAMINER
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HAN, KWANG S

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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03/04/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com  
jarmstrong@oliff.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,792	<b>Applicant(s)</b> YOSHIDA, NAOHIRO	
	<b>Examiner</b> Kwang Han	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-22 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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**FUEL CELL SYSTEM WITH PRESSURE REGULATOR AND METHOD FOR  
DRIVING SAME**

Examiner: K. Han    SN: 10/586,792    Art Unit: 1795    March 2, 2010

**Detailed Action**

1.     The Applicant's amendment filed on November 5, 2009 was received. Claim 9 was amended. Claim 24 was added.
2.     The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Specification***

3.     The objection to the specification has been withdrawn in view of the Applicant's amendment to the title.

***Claim Rejections - 35 USC § 112***

4.     The claim rejections under 35 U.S.C. 112, second paragraph, on claim 20 is withdrawn, because of Applicant's arguments.

***Claim Rejections - 35 USC § 102***

5.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 9, 10, 12-15, 17-20 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Iio et al. (US 6663990).

Regarding claims 9, 10, 12-15, 18, 19 and 24, Iio discloses a fuel cell system comprised of a fuel cell for generating power by circulating a fuel gas [Abstract], hydrogen tank (fuel gas supply source, 14) for supplying hydrogen, a hydrogen supplying line (Figure 8), a control unit (5, control means) that controls a hydrogen draw pump (12) in combination with a control valve (11, pressure regulating device) located in a hydrogen passage (Figure 9) to regulate the flow rate and pressure of the hydrogen gas in response to output signals (4:12-7:16) including the end of a purge cycle which makes up a deficiency of the fuel gas according to the required gas quantity regulating the pressure (to a preset operating pressure) of the fuel gas while inhibiting a variation (resetting the drawing power of the pump) of the drive quantity (5:10-28).

Regarding claim 17, Iio discloses a pair of control valves (11, 14, hydrogen control valves; Figure 5).

Regarding claim 20, Iio discloses the pressure regulating means is varied monotonously as evidenced by the gradual slopes of the pressure variation (Figure 3).

### ***Claim Rejections - 35 USC § 103***

7. The claim rejection under 35 U.S.C. 103(a) as unpatentable over Yang et al. in view of Iio et al. on claims 9-22 is withdrawn, because independent claim 9 has been amended.

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8. Claims 11, 16, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iio et al. as applied to claim 9 above, and further in view of Driggers (US 4186707).

The teachings of Iio as discussed above are herein incorporated.

Regarding claims 11, 16, and 21, Iio is silent towards raising the gas quantity higher than a standard value.

Driggers teaches a fuel economizing system which provides automatically adjusting a metering valve in response to changes in load conditions on an engine [Abstract] wherein the fuel pump provides a constant pressure supplied to a reservoir (2:35-47) to provide sufficient fuel pressure and fuel in heavier load conditions. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary a valve which provides fuel at a period when fuel is required in a higher load condition because Driggers teaches this allows for providing sufficient fuel pressure and fuel in heavier load conditions.

Regarding claim 22, The discussion concerning claims 11, 16 and 21 are herein incorporated. Iio further discloses the drive quantity of drive means to be varied as required by the control unit [Abstract].

### ***Response to Arguments***

9. Applicant's arguments filed November 5, 2009 have been fully considered but they are not persuasive.

*Applicant's principal arguments are:*

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*(a) the lio reference cannot operate to control one of the hydrogen draw pumps and the control valve while inhibiting the other because the control valve and the hydrogen pump are connected in series.*

In response to Applicant's arguments, please consider the following comments:

(a) the lio reference discloses the hydrogen draw pump and the control valves work in conjunction and are controlled by the control unit to follow a control program to allow for the purging of moisture within the fuel cell. As discussed in the rejection above the process of returning to a normal operating mode requires the pump to reset the draw power of the pump while the valves are controlled to meet a control target (5:10-28).

The operation of the valves and pump are not connected in series and are taught to be individually controlled to meet the target requirements of the fuel cell.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact/Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/K. H./  
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795